

that the UE-experienced interference varies significantly in each subframe because each of the neighboring cells could be every UL/DL configuration of seven possible configurations. In one embodiment, apparatus 10 is further controlled by memory 14 and processor 22 to collect measurements for mobility and RLF only from the 1st subset.

**[0046]** According to another embodiment, apparatus 10 may be an eNodeB. In this embodiment, apparatus 10 may be controlled by memory 14 and processor 22 to receive one or more CSI reports from a UE. The received CSI report(s) may include at least two different CSI report subframe subsets defined according to the interference levels, as discussed above. Apparatus 10 may then be controlled by memory 14 and processor 22 to schedule UEs according to the CSI report subframe subsets. As a result of these steps apparatus 10 will have a more accurate CSI report form the different report subsets so that it can select the proper subframe in which to schedule the UEs.

**[0047]** FIG. 4 illustrates a flow diagram of a method according to one embodiment. The method includes, at 400, designating all subframes as DL subframes, except for those subframe(s) scheduled for UL data and control transmission. The method may also include, at 410, monitoring DL control channels in the subframes designated as DL subframes. At 420, the method includes defining at least two different CSI report subframe subsets according to the interference levels. For example, a 1st subset may include those subframes in which all the neighboring cells are DL, and a 2nd subset may include those subframes in which each neighboring cell may be UL or DL. The method may then include, at 430, collecting measurements for mobility and radio link monitor (RLM) only from the subframes in which all neighboring cells are DL (e.g., 1st subset).

**[0048]** FIG. 5 illustrates a flow diagram of a method according to one embodiment. The method includes, at 500, receiving one or more CSI reports from a UE. The received CSI report(s) may include at least two different CSI report subframe subsets defined according to the interference levels, as discussed above. The method may then include, at 510, scheduling UEs according to the CSI report subframe subsets.

**[0049]** According to certain embodiments, the functionality of the flow diagram of FIGS. 4 and 5, or that of any other method described herein, may be implemented by software stored in memory or other computer readable or tangible media, and executed by a processor. In other embodiments, the functionality may be performed by hardware, for example through the use of an application specific integrated circuit (ASIC), a programmable gate array (PGA), a field programmable gate array (FPGA), or any other combination of hardware and software.

**[0050]** The computer readable media mentioned above may be at least partially embodied by a transmission line, a compact disk, digital-video disk, a magnetic disk, holographic disk or tape, flash memory, magnetoresistive memory, integrated circuits, or any other digital processing apparatus memory device.

**[0051]** The described features, advantages, and characteristics of the invention may be combined in any suitable manner in one or more embodiments. One skilled in the relevant art will recognize that the invention may be practiced without one or more of the specific features or advantages of a particular embodiment. In other instances, additional features and advantages may be recognized in certain embodiments that may not be present in all embodiments of the invention.

**[0052]** One having ordinary skill in the art will readily understand that the invention as discussed above may be practiced with steps in a different order, and/or with hardware elements in configurations which are different than those which are disclosed. Therefore, although the invention has been described based upon these preferred embodiments, it would be apparent to those of skill in the art that certain modifications, variations, and alternative constructions would be apparent, while remaining within the spirit and scope of the invention. In order to determine the metes and bounds of the invention, therefore, reference should be made to the appended claims.

1. A method, comprising:

designating all subframes in a time division duplex configuration as downlink subframes, with the exception of any subframes scheduled for uplink data and control transmission;

monitoring downlink control channels in the subframes designated as downlink subframes; and

defining at least two different channel state information (CSI) report subframe subsets according to interference levels.

2. The method according to claim 1, further comprising collecting measurements for mobility and radio link monitor (RLM) only from the subframes in which all neighboring cells are downlink.

3. The method according to claim 1, wherein one of the at least two different channel state information (CSI) report subframe subsets comprises those subframes in which all the neighboring cells are downlink.

4. The method according to claim 1, wherein the subframes in which all the neighboring cells are downlink comprises subframes 0, 1, 5, 6.

5. The method according to claim 1, wherein another one of the at least two different channel state information (CSI) report subframe subsets comprises those subframes in which each neighboring cell may be uplink or downlink.

6. The method according to claim 1, wherein the subframes in which each neighboring cell may be uplink or downlink comprises subframes 3, 4, 7, 8, 9.

7. The method according to claim 1, wherein downlink-to-uplink reconfiguration periodicity comprises 10 ms, 200 ms, 640 ms or other periodicities.

8. The method according to claim 1, wherein the channel state information (CSI) report subframe subsets are configured by an eNB, and the subsets are informed to UE through higher layer signaling or system broadcast information.

9. An apparatus, comprising:

at least one processor; and

at least one memory including computer program code, the at least one memory and the computer program code configured, with the at least one processor, to cause the apparatus at least to

designate all subframes in a time division duplex configuration as downlink subframes, with the exception of any subframes scheduled for uplink data and control transmission;

monitor downlink control channels in the subframes designated as downlink subframes; and

define at least two different channel state information (CSI) report subframe subsets according to interference levels.

10. The apparatus according to claim 9, wherein the at least one memory and the computer program code are further configured, with the at least one processor, to cause the appa-